

Superpressure Tow Balloon for Extending Durations and Modifying Trajectories of High Altitude Balloon Systems, Phase I

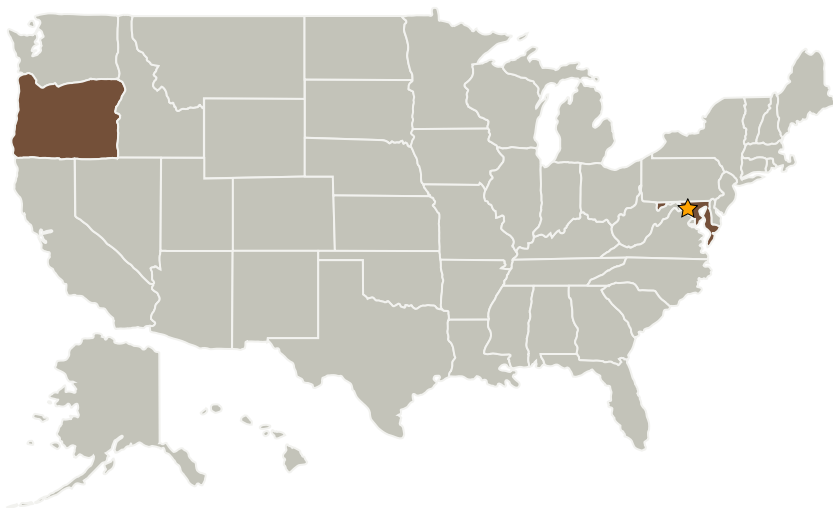
Completed Technology Project (2005 - 2005)



Project Introduction

The proposed innovation involves the concept of using a Superpressure Tow Balloon (STB) with existing NASA high altitude balloon designs to form a tandem balloon system that provides significantly higher performance at a relatively low cost. Performance improvements include: longer durations, higher altitudes and greater stability, larger payload percentages, improved trajectory control, and more operational flexibility. The STB and related technology specifically addresses the need for balloon design concepts for long duration missions which can provide: reduced material strength requirements; increased reliability; enhanced performance; reduced manufacturing time; reduced manufacturing cost; and improved mission flexibility. In addition, a STB offers a realistic opportunity for low cost trajectory control by providing effective vertical maneuvering which can strongly influence the horizontal latitude of the balloon's flight path.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Goddard Space Flight Center(GSFC)	Lead Organization	NASA Center	Greenbelt, Maryland
GSSL, Inc.	Supporting Organization	Industry	Tillamook, Oregon



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Primary U.S. Work Locations

Maryland

Oregon

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Goddard Space Flight Center (GSFC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Timothy Lachenmeier

Technology Areas

Primary:

- TX14 Thermal Management Systems
 - └ TX14.1 Cryogenic Systems
 - └ TX14.1.1 In-space Propellant Storage & Utilization